

Attorney Docket # 4100-98DIV



17/Appeal
Brief
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1-7-00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Alfons SCHUSTER et al.

Serial No.: 09/041,416

Filed: March 12, 1998

For: Method of Imaging an Erasable Printing Form

Examiner: S. Funk
Group Art: 2854

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June 22, 2000

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Klaus P. Stoffel

Name of applicant, assignee or Registered Representative

Signature

June 22, 2000

Date of Signature

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Board of Patent Appeals and Interferences
Washington, D.C. 20231

APPEAL BRIEF

SIR:

This is Appellant's appeal brief submitted (in triplicate) in support of appeal taken of the Decision of the Examiner dated August 12, 1999 finally rejecting claims 1-10, 12-22 and 29 of the above captioned application.

The fee of \$300.00 for filing an Appeal Brief (Large Entity) pursuant to 37 C.F.R. §1.17(f) is submitted herewith. A Petition for the two-month extension of time is enclosed herewith along with the fee of \$380 (Large Entity). Any additional fees or charges in connection with this application may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

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I. REAL PARTY IN INTEREST

The real party in interest herein is Man Roland Druckmaschinen AG, a corporation of the nation of Germany as evidenced by an assignment of record recorded on March 12, 1998 at reel 9039 frame 0241 (four pages).

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals and/or interferences related to the above-identified application at the present time.

III. STATUS OF CLAIMS

Claims 1-10, 12-22 and 29 are claims on appeal. Claims 11 and 23-28 are cancelled.

IV. STATUS OF AMENDMENTS

Appellants filed an amendment on January 12, 2000, pursuant to 37 C.F.R. 1.116, following final rejection of the claims, which was not entered on the record by the Examiner upon filing of the Notice on Appeal. Accordingly, the form of the claims on Appeal are as said claims were amended by the prior Amendments filed on January 4, 1999 and June 25, 1999. Further, a Supplemental Amendment Pursuant to 37 C.F.R. 1.116 is filed herewith. Appellants submit the Amendment addresses the rejection of claim 1 pursuant to 35 U.S.C. 112 by adopting the suggestion of the Examiner in the Advisory Action dated February 9, 2000. Appellants

respectfully request the Amendment be entered as correcting an ambiguity or placing the application in better form for appeal.

V. SUMMARY OF THE INVENTION

The present invention is a method of imaging and erasing an erasable printing form. The method allows for a small, flexibly constructed printing form that can be produced within the printing press itself and can be readily replaced when necessary. The method involves a number of steps, including:

1. electrically charging the printing form over its entire surface;
2. applying liquid toner particles, which have one of individual charges opposite the charges of the printing form, dipole and multi-pole moments opposite the charges of the printing form;
3. controlling the thickness of the layer of liquid toner particles by controlling one of voltage and time during the charging step;
4. fixing the liquid toner particles with a source of energy in accordance with a picture to be printed by removing and breaking down non-fixed liquid toner particles; and either
 - 5a. removing and breaking down non-fixed liquid toner particles to change ink acceptance behavior of the layer, or
 - 5b. removing the fixed liquid toner particles to erase the printing form as a whole after an end of a printing process.

The invention may optionally include other additional steps such as an additional fixing step after the step of removing and breaking down non-fixed toner (p. 7, lines 7-8),

hydrophilizing the printing form surface from which toner has been removed (p. 8, lines 7-8) and using a plurality of toner particles having different charge densities to allow for color differentiation in the printing process (p. 9, lines 7-13).

Regarding the subject matter Appellants regard as the invention, the following is a summarized disclosure of the invention as claimed.

1. Page 3, lines 4-13, detail and support the features of claim 1 with respect to electrically charging the printing form on its entire surface, applying liquid toner particles having a single opposite charge with respect to the printing form or alternatively a dipole and/or multipole moment opposite the charge of the printed form, fixing the liquid toner with an energy source and either removing and breaking down the non-fixed liquid toner particles to change ink acceptance or removing the fixed liquid toner particles is disclosed.
2. Page 6, lines 16-19 detail and support the feature of claim 1 with respect to applying the toner particles. In addition, page 8, lines 16-19 detail and support use of dipole, quadripole or other multipole moments for the toner particles. Further, Fig. 1 illustrates the charging of the printing form.
3. Page 6 line 19 to page 5 line 4 detail and support the feature of claim 1 with respect to fixing the toner particles with a source of energy, in this case a laser the causes cross linking and adherence of the toner particles to the printing form where irradiated. Fig. 2 illustrates fixing the toner to the printing form using a laser as an energy source.
4. Page 10, lines 7 to 10 detail and support removing and breaking down non-fixed liquid toner to change ink acceptance behavior of the layer.

5. Page 8, lines 8-14 detail and support the feature of claim 1 with respect to removing the fixed liquor toner to erase the printing form as a whole. Examples are given including use of a solvent applied by brushing or with a cloth or with ultrasonic treatment. Fig. 3 illustrates removing toner from the printing form surface using a jet of liquid applied with a nozzle.

6. Page 12, lines 2-5 detail and support the feature of claim 1 with respect to controlling the thickness of the layer of toner by varying the voltage and/or time of the step involving applying toner to the printing form.

The feature of claim 2, regarding fixing the toner on image locations of the printing form and removing the liquid toner from the non-image locations in a corresponding manner is disclosed at page 6, line 19 to page 5 line 4 and page 11, lines 8-16.

The feature of claim 3, regarding the charging step being performed on a printing form having a conductive surface is disclosed at page 6, lines 8-11.

The feature of claim 4, regarding the charging step being performed on a printing form that is metal is disclosed at page 6, lines 2-5.

The feature of claim 5, regarding the charging step being performed on a printing form having a dielectric on its surface is disclosed at page 6, lines 1-2.

The feature of claim 6, regarding the charging step being performed on a printing form having a dielectric on its surface using corona discharge is disclosed at page 6 lines 11-15.

The feature of claim 7, regarding the fixing step involving fixing a layer of toner on a printing form using a beam of electromagnetic waves is disclosed at page 10, lines 10-12.

The feature of claim 8, regarding the fixing step involving fixing a layer of toner on a printing form using a laser beam is disclosed at page 7, lines 1-4.

The feature of claim 9, regarding the fixing step involving fixing a layer of toner on a printing form using a beam in the infrared region is disclosed at page 7, lines 9-10.

The feature of claim 10, regarding providing an absorber material to the toner or the printing form is disclosed at page 7, lines 12-20.

The feature of claim 12, regarding various methods for removing toner not fixed on the printing form surface is disclosed at page 7, lines 4-7, page 9 line 14 to page 10 line 1 and Fig. 3.

The feature of claim 13, regarding an additional fixing step by full surface treatment with radiation is disclosed at page 10 line 17 to page 11 line 2.

The feature of claim 14, regarding an additional fixing step by heat radiation is disclosed at page 10, line 17 to page 11 line 2.

The feature of claim 15, regarding an additional fixing step of hydropholizing regions of the printing form which are not covered by the liquid toner particles for wet offset printing is disclosed at page 8, lines 3-7.

The feature of claim 16, regarding the fixing step including use of a focused non-coherent light source for cross-linking the toner on the surface of the printing form is disclosed at page 11, lines 8-10.

The feature of claim 17, regarding the fixing step including use of a mercury vapor lamp is disclosed at page 11, lines 8-10.

The feature of claim 18, regarding the removing step ablating the toner from the surface of the printing form using a focused and non-coherent light source is disclosed at page 11 lines 8-16.

The feature of claim 19, regarding the erasing step including various means for removing a remainder of the layer of fixed particles, is disclosed at page 8, lines 11-14 and page 11, lines 10-13.

The feature of claim 20, regarding the erasing step including using an organic solvent to remove the remaining layer of fixed particles is disclosed at p. 8, lines 11-14 and at page 11, lines 10-13.

The feature of claim 21, regarding the erasing step including use of an acid and an alkaline aqueous solution under high pressure to remove the remaining layer of fixed particles is disclosed at page 11, lines 10-13.

The feature of claim 22, regarding the erasing step including use of a brush or a cleaning cloth to remove the remaining layer of fixed particles is disclosed at page 8, lines 11-14.

The features of claim 29, regarding fixing the toner on non-image locations of the printing form and removing liquid toner from the image locations in a corresponding manner is disclosed at page 11, lines 13-16.

VI. ISSUES

Is the subject matter of the claims unpatentably obvious under 35 U.S.C. 103(a), over the teaching of Doyle EP 099,264 (Doyle) in light of Back U.S. Patent No. 3,607,255 (Back), Raschke et al. U.S. Patent No. 3,921,527 (Raschke et al.), Chu et al. U.S. Patent No. 4,103,616 (Chu et al.), Peterson U.S. Patent No. 4,020,762 (Peterson) and/or Tomanek U.S. Patent No. 3,650,797 (Tomanek)?

VII. GROUPING OF CLAIMS

The rejected claims of this appeal include independent claim 1 from which claims 2-10, 12-22 and 29 depend. The claims stand or fall together.

VIII. ARGUMENT

The Examiner asserts that Doyle teaches the method as recited with the exception that charging the printing form, applying liquid toner and erasing the fixed toner particles after a printing process. The Examiner further asserts that charging the printing form and the toner and applying charged dry or liquid toner to the printing form are admitted in Appellants' disclosure and are conventional in the art. The Examiner further asserts that erasing the fixed toner particles after a printing process is conventional in the art as taught by Raschke et al. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the method of Doyle with the step of charging the printing form in view of Appellants' admission of prior art to provide a greater attraction for the toner particles and erase the fixed toner particles after a printing process in view of Raschke et al.

AVEREMENTS

Appellants aver that the Examiner erred in concluding that the modification and combination as proposed is the present invention in that certain claimed elements are neither taught nor suggested in the prior art. Appellants further aver that assuming arguendo the Examiner had been able to establish that the prior art discloses each element of the invention as presently claimed, the Examiner further erred in concluding that the present invention as claimed

was prima facie obvious in that there is insufficient motivation in the prior art to combine the cited references.

ANALYSIS

35 U.S. C. 112

Appellants have submitted herewith a proposed Supplemental Amendment pursuant to 37 CFR 1.116 which adopts the Examiner's suggestions to amend Claim 1 and the specification to address an objection and sec. 112 rejections, respectively.

Specifically, in the specification, at page 8, line 3, after "remove" -- can be subjected on the non-picture regions for a positive image or on the picture regions for a negative image, i.e. on the regions in which the layer 4 has been removed-- is inserted.

A minor correction is also adopted from the Examiner's suggestion, namely in Claim 1, line 6, "for" is deleted and insert -- by-- is inserted.

Appellants request the Amendment be entered on the record to address the objection and rejection.

The Examiner erred in concluding the present invention as claimed was prima facie obvious in that the modification and combination as proposed by the Examiner does not teach or even suggest each of the elements of the invention as presently claimed. In order to establish a case of prima facie obviousness, three criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art

reference(s) must teach or suggest all the claim limitations. The present invention includes the element of controlling the thickness of the layer of liquid toner particles by controlling at least one of the applied voltage and the duration of the charging step. This element is neither taught nor even suggested in the prior art. Regarding the primary reference, Doyle discloses a method of producing a lithographic printing plate including the steps of uniformly coating a substrate with a powder capable of being melted by a laser. When the powder has been exposed to laser in selected areas it melts leaving non-melted powder in other areas. The non-melted powder is then removed. Doyle neither teaches nor suggests a means for controlling the thickness of the layer of toner formed on the substrate.

The missing element is not supplied by any of the other cited prior art references. Specifically, Back teaches a plate adapted for conversion to a lithographic offset master comprising a paper web, a dielectric film over the paper coated with a finely divided silica. Back also teaches a method of forming such a plate including charging the aforementioned plate with an image defined electrostatic charge on the coated dielectric film and developing the film with toner to form an image. Nothing in this reference fairly teaches or even suggests the thickness of toner may be regulated in any way. In Chu et al., a silicone elastomer such as an organopolysiloxane layer is used as a printing master. The silicone is treated with photo and/or thermally reactive azide pendant sites that can be activated upon exposure to photo and/or thermal energy. The resulting pendant site decomposes upon photo or thermal excitation to form reactive nitrene sites that crosslink with toner. The normally repellent silicone is thus able to bond with toner. The Chu et al. reference, for all that it discloses, does not fairly teach or even suggest the limitation of controlling the toner layer thickness. Similarly, the Peterson reference

teaches a photographic printing plate imaged with a laser and developed by ultraviolet light. The Peterson reference, for all that it discloses, does not fairly teach or even suggest the limitation of controlling the toner layer thickness.

There Is Insufficient Motivation To Modify And Combine The Prior Art References

The prior art of record contains no motivation to modify the solid toner of Doyle to the liquid toner of the present invention. The Examiner appears to consider the use of both solid and liquid toner to be equivalents and thus has established sufficient motivation on the record to modify Doyle by substituting its solid toner with a liquid toner. Appellants submit that the Examiner has failed to establish equivalence between liquid and solid toner. Thus, there is no motivation on the record to modify Doyle to use liquid rather than solid toner. Furthermore, the Examiner has failed to establish the required motivation to make further suggested combinations of the prior art to derive the present invention as claimed.

In order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art and cannot be based on either the applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents. *In re Ruff*, 256 F.2d 590, 118 USPQ 340 (CCPA 1958). Obviousness can only be established by combining references or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). The mere fact that references can

be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). In determining the differences between the prior art and the claims, the question under 35 U.S.C. is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983).

The Examiner has failed to meet the burden of establishing equivalence between solid and liquid toner in the prior art when used in the manner taught by the invention as presently claimed. This failure stems from the Examiner's failure to establish the desirability of the combination in the prior art. The Examiner relies on a finding of functional equivalence between solid and liquid toner as a basis for substituting one for another. This, however, does not meet the legal standard for establishing a motivation to combine references. Furthermore, the Examiner has avoided the required "as a whole" inquiry, by failing to consider how the present invention achieves the desired result, which is materially different from how the reference used to establish "equivalence" between the two forms of toner achieves the desired result. Specifically, while Doyle charges the entire printing form and coats it with toner, the Calabrese method uses toner in an entirely different manner.

The Doyle reference teaches improvements relating to printing plates in which a plate is prepared by uniformly coating a substrate with a powdered material. Doyle does not fairly teach or even suggest applying liquid toner particles to the printing form.

The Examiner has suggested the Doyle reference be modified to use a liquid toner presumably by establishing the equivalence between liquid and solid toner. This "equivalence"

was initially based on a discussion in Appellants' disclosure at page 1, lines 6-13. Appellants dispute this interpretation of the disclosure. The citation only referred to methods where toner is imaged not when it entirely covers the printing form. Furthermore, as stated above, if the equivalence is not known by one of skill in the art, nor disclosed in cited prior art references, then Appellants' disclosure cannot be used against it.

Alternatively, the Examiner cites Calabrese et al. as teaching the "conventionality" of applying and fixing liquid toner particles to a printing form. However, this is only part of the analysis. The record has only established that solid toner and liquid toner are functional equivalents-because they both function as toner. However, this functional equivalence is insufficient, by itself to establish the motivation to combine references as required by the statute. See *In re Ruff*, 118 USPQ at 346. Use of a liquid toner in one series of steps or method does not establish its equivalence for use in any and all series of steps or methods absent some teaching of the desirability of this change in the prior art. By viewing the use of toner in isolation from the rest of the methodology, the Examiner is relying on the mere fact that references can be combined or modified to conclude the resultant combination is obvious without establishing support in the prior art of the desirability of the combination. This is clearly inappropriate. See *In re Mills*, 16 USPQ2d at 1432.

Motivation to substitute liquid for solid toner in the manner described in the present invention is not found in any of the cited prior art references. In Calabrese et al., the liquid toner is used by applying it only to the anodized surface in a predetermined pattern corresponding to the image to be printed. This method of applying toner is in contrast to the method of applying toner as disclosed in the present invention. This method of applying toner is

also in contrast to that of Raschke et al., in which a solid toner is used to completely cover a printing form surface.

None of the references, either alone or in combination, provide the required motivation to substitute a liquid for a solid toner when used to completely cover a printing form surface to image a printing form. The Raschke et al. reference teaches applying an electrostatic charge selectively to an anodized surface of an aluminum plate in a pattern corresponding to the image to be printed and applying a toner to the charged portions of the surface. The toner is then fixed to the surface. The Raschke et al. reference, for all that it discloses, does not teach nor even suggest use of a liquid toner or equivalence of a liquid and solid toner. In fact, upon a careful reading, Raschke et al. actually teaches away from using a liquid toner. At column 4, lines 44 to 50, the method of removing toner is to remove the electrostatic charge so that the toner is "loose" because of a discharge of the image holding field. No other step in removing undesirable toner is noted. It appears from this disclosure that the toner is indeed solid. Appellants submit that one of ordinary skill in the art is aware that the adherent forces of a fine liquid droplet are likely to prevent a liquid toner from being effectively removed by merely removing the electrostatic charge from the printing surface.

This difference in prior art usage of solid as opposed to liquid toner touches upon a persistent problem in the printing industry. Namely, adherence of ink on the non-image portion of the printing form which results in a compromised printed product. The prior art is replete with discussion of use of the toner to attract ink and efforts to minimize attraction of ink to the non- image portion of the printing form. See, for example, Back at column 3, lines 28 to 42 (use of silica to improve coating of non-image surface with desensitizing solution) and

Tomanek at Abstract (removing toner particles to render image free areas hydrophilic). Appellants respectfully submit that although the prior art may establish equivalence between solid and liquid toners in the circumstance where they are only applied to an image area on a printing form (which Appellants do not here admit), but the prior art does not teach these as equivalents when applied uniformly on the entire surface of the printed form. This is because removal of a liquid toner from the non-image portion of the printing form involves a different step than removal of a solid toner. See discussion of Raschke et al. *supra*. In conclusion, the Examiner has failed to establish the equivalence of solid and liquid toner as used in the present invention. As a result, there is no motivation in the cited prior art references, either alone or in combination, to modify the Doyle reference to use liquid toner as disclosed in Calabrese et al.

The Examiner further suggests combining the step of removing toner from the master using a solvent as disclosed in Raschke et al. with the Doyle reference as previously modified to use a liquid rather than solid toner. The Examiner has not established sufficient motivation to make this further proposed combination. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See *In re Mills*, 16 USPQ2d at 1432. Appellant has shown earlier that there is insufficient motivation on the record to modify the solid toner of Doyle to a liquid toner. A further combination of the already unjustified modification of the Doyle reference is clearly not obvious to one of ordinary skill in the art. The cited examples and references of prior art taken alone, or in any combination or reconstruction reasonably suggested to one skilled in the art, do not teach how to make the patented invention, except by impermissible use of hindsight knowing the patent's disclosure to be the desired goal. This is

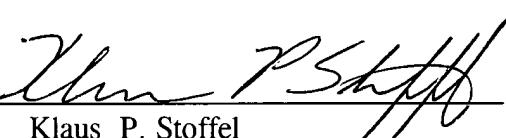
clearly impermissible. *Pfaff v. Wells Electronics, Inc.*, 9 USPQ2d 1366 (DC Ind 1998). In conclusion, there is no reasonable suggestion in the prior art references taken alone or in combination to add the cleaning step of Raschke et al. to the unjustified modification of references as proposed by the Examiner, to transmute the Doyle reference into the claimed invention. As a result, the present invention is not obvious in light of the prior art.

CONCLUSION

For all the foregoing reasons, claims 1-10, 12-22 and 29 are not obvious from the relied upon prior art and the final rejection of these claims by the Examiner should be reversed.

Respectfully submitted,
COHEN, PONTANI, LIEBERMAN & PAVANE

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